100 YEARS OF TRANSPORTATION EXCELLENCE
1906 - 2006

This fabulous century

2006 marks the Virginia Department of Transportation's 100th year, and celebrations were held around the state to commemorate our centennial. Pictured are Central Office employees gathered in front of the historic Old Highway Building where banners were unveiled on March 6. Below, former VDOT commissioners Hal King, Ray Pethtel, Chip Nottingham and Dave Gehr blow out 100 candles, along with Commissioner Greg Whirley and Secretary of Transportation Pierce Homer. For district celebrations, see page 15.

VDOT's Top 100

To commemorate the Virginia Department of Transportation's centennial, this special edition of the employee Bulletin features VDOT's "Top 100"– the top 100 efforts that we can be most proud of as a 100-year-old state transportation agency. Included on this list are a number of successes and ways that we have made our mark – both regionally and nationally.

The Top 100 steps of progress were compiled by combing VDOT publications, polling our nine district offices and the Virginia Transportation Research Council, and taking online and emailed suggestions from employees statewide. VDOT's Top 100 success stories are not listed in order of importance, but rather are grouped by category to highlight the department's history and activities back to its beginnings in 1906. It is not designed to be exhaustive – we have many more successes of which to be proud – but the following 100 accomplishments are representative of our 100 Years of Transportation Excellence.

Note: Employee quotes have been edited to fit space limitations.
See InsideVDOT to add your memories.

100 YEARS OF TRANSPORTATION EXCELLENCE
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FROM MOBILITY TO MOBILITY

An employee newsletter published by the Virginia Department of Transportation

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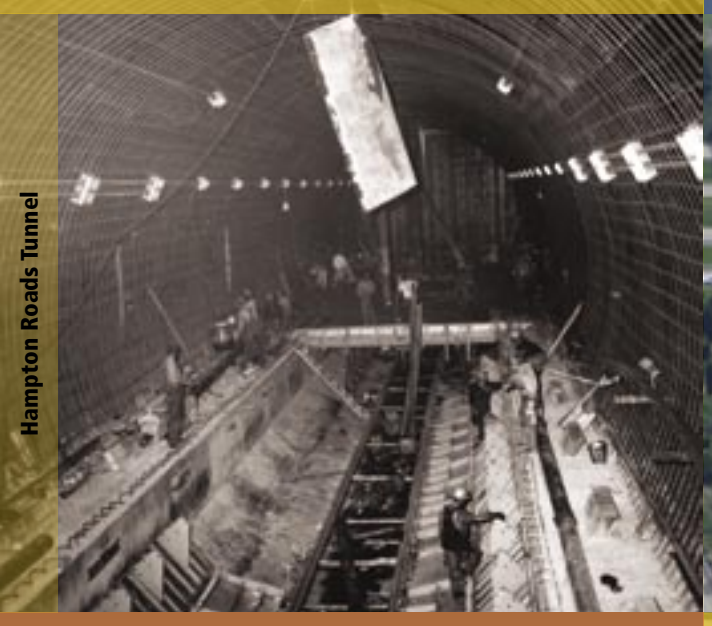

Hampton Roads Tunnel

I-295/64

I-395/95 around Pentagon

Jamestown-Scotland Ferry

Springfield Interchange

Work zone

Brook Run discovery

Dashboard

VTRC research

Safety Service Patrol

Scenic roads

Northern Virginia District

DEPARTMENT FIRSTS

Here are examples of firsts in Virginia and in the nation after the State Highway Commission began on March 6, 1906:

1. **First highway improvement project completed:** 8.2-mile Williamsburg to Jamestown project, 1907.
2. **First construction appropriation:** In 1908, the General Assembly legislated a $25,000 annual construction budget.
3. **First registration and licensing of automobiles in Virginia:** Slightly more than 2,700 automobiles, in 1910.
4. **First concrete road built in Virginia:** In 1913, a 0.9-mile pavement running from Farmville toward Hampden-Sydney College.
5. **First primary highway system established by the General Assembly:** Became the state's responsibility in 1918.
6. **First formal designation of the Department of Highways:** In 1927, the General Assembly established the commission as a state agency.
7. **First statewide secondary roads system established:** In 1932, Virginia counties were allowed to transfer responsibility for their roads to the department.
8. **First interstate-quality highway in Virginia:** The Shirley Highway, completed in 1949; now part of I-95/395.
9. **First structure across the Hampton Roads waterway:** The Hampton Roads Bridge-Tunnel, finished in 1957.
10. **First section of an interstate highway completed in Virginia:** The I-95 Emporia Bypass, opened in 1959.
11. **First interstate route fully completed in the nation:** I-495, the Washington Beltway, accepted in 1964.
12. **First high-occupancy vehicle (HOV) lanes in Virginia:** HOV lanes were reserved for buses on I-95 (now I-395) in 1969, setting a national precedent.
13. **First mountain tunnel in Virginia:** Big Walker Mountain Tunnel on I-77, finished in 1972.
14. **Virginia's first Smart Traffic Center:** Opened in Northern Virginia in 1985.
15. **First dedicated funding for Virginia's highways:** A half-cent sales tax increase in 1986.
16. **First commuter train service in Virginia:** The Virginia Railway Express, in northern Virginia, begun in 1992.
17. **First private toll road built in Virginia in more than a century:** The Dulles Greenway opened in 1995.
18. **First outcome-based contract in the nation:** Let by VDOT in 1997 for interstate maintenance and operation.
19. **First road in the nation for research and testing of transportation innovations:** The Smart Road opened in 2000.
20. **First road built under the Public-Private Transportation Act (PPTA):** Route 895, in 2002.

13

8

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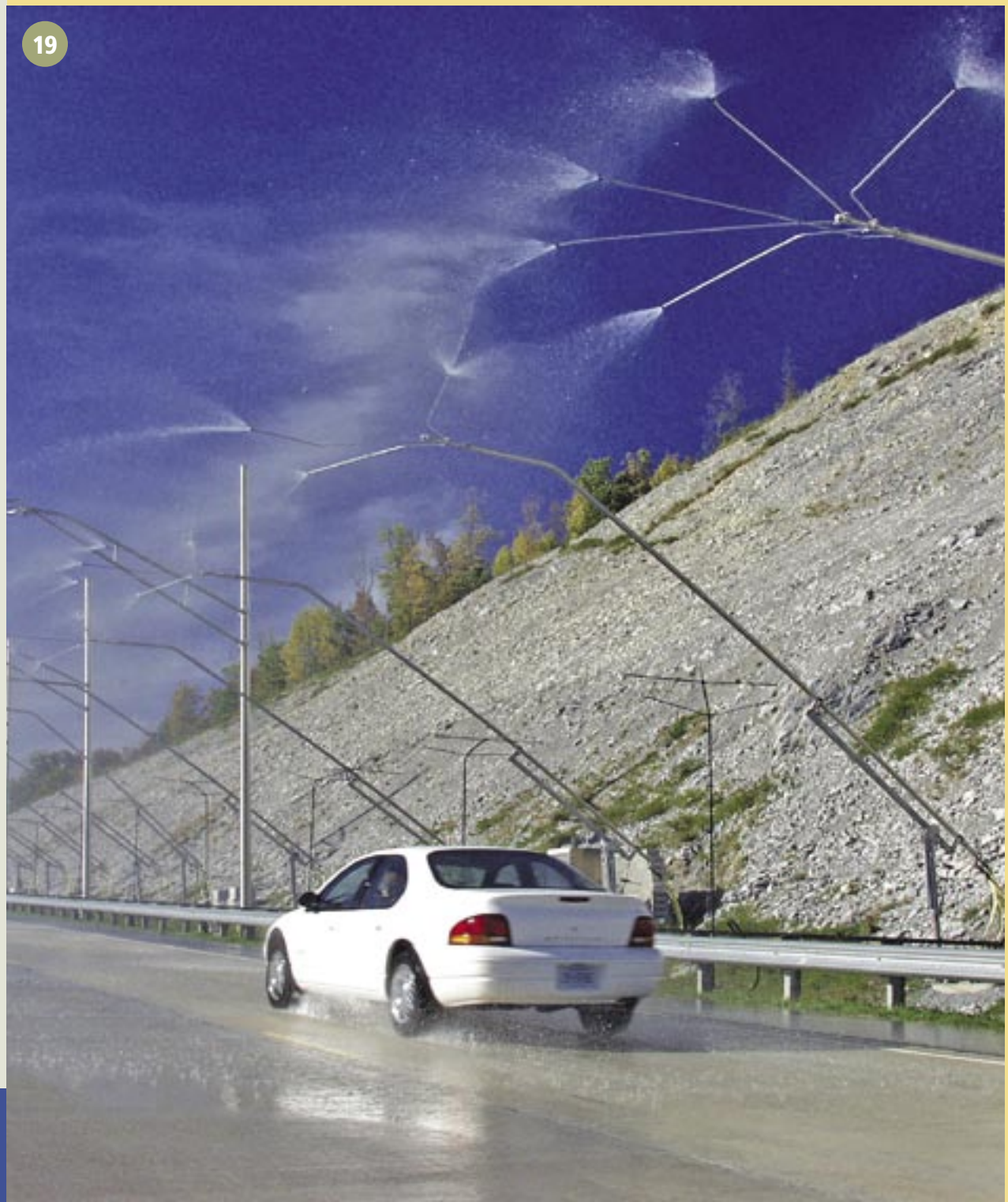


HIGHWAY AND ROADWAY NETWORKS

VDOT is responsible for maintaining 57,516 centerline miles of highways and roads, which represents 124,681 lane miles. This mileage is the third-largest state responsibility in the nation.

21 **Interstate highway system:** 1,118 miles of limited-access highways, built in collaboration with federal funding (system established in 1956).

22 **Primary highway system:** 8,074 miles, includes highways and roads with route numbers less than 600 (system established in 1918). Photo: Pocahontas Parkway.

23 **Secondary roads system:** 47,993 miles, includes local routes numbered 600 or greater (system established in 1932).

24 **Frontage roads:** 331 miles of all-weather surface roads adjacent to interstate or primary roads.

SECONDARY ROADS

"One of the effects of the 'Byrd Road Act' of 1932 was to cause a survey of every mile of every road in every county that opted to be included. The resident engineers made road by road assessments of the roads as to their length, state of repair, number of structures, and other details. These records were compiled and eventually were stored in what was called Central File…Dan Roosevelt gave the collection the moniker 'History of the Secondary System.' There was only one woman (and she was in charge) who knew: a) what you were talking about when you asked to see HOTSS, and b) where it was…."

William H. Bushman, senior research scientist
Virginia Transportation Research Council, 35 years of service.

INTERSTATE MILESTONES

2006 marks the 50th anniversary of the law that created the U.S. Interstate Highway System. Here are some of Virginia's notable interstates:

25 **Interstate 81:** Virginia's longest interstate, I-81 traverses 325 miles from Bristol to Winchester. Begun in 1957, construction was completed in 1971. Because traffic volumes have tripled in the past 20 years, negotiations are under way for a public-private partnership to improve the corridor.

26 **Interstate 95:** This interstate extends 177 miles through Virginia from the nation's capital to North Carolina. It became the major long-distance thoroughfare up and down the East Coast, replacing in that role the long-time favorite of coastal travelers, Route 1.

27 **Interstate 85:** Starting in Petersburg, I-85 branches off from I-95 and runs 69 miles south to the state line, then to Raleigh, Charlotte and farther south. It was completed in 1972.

28 **Interstate 77:** Connecting North Carolina and West Virginia through the commonwealth's mountainous Southwest, I-77 was completed in the mid-1970s, and boasts Virginia's only mountain tunnels, Big Walker and East River.

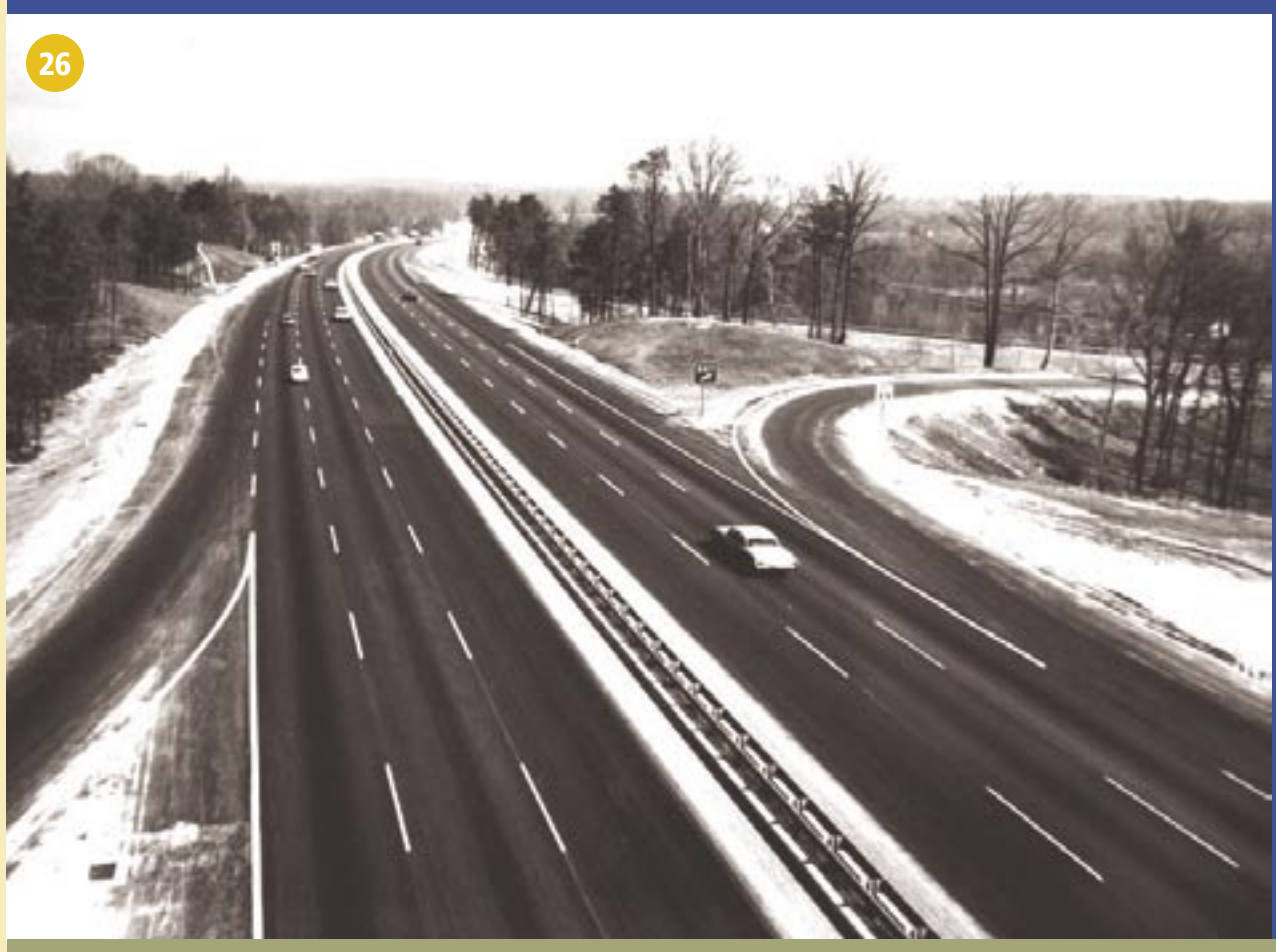
29 **Interstate 64:** Stretching nearly 300 miles across Virginia, I-64 draws traffic into the Hampton Roads region, where seaports, military bases and recreational destinations are concentrated. The interstate was completed in 1979.

30 **Interstate 66:** Extending 75 miles from Strasburg to Washington, D.C., I-66 was among Virginia's first projects to incorporate multimodal connectivity, integrating vehicle traffic with Metrorail service. A 10-mile segment leading to Washington was the first stretch of interstate built by the department under the National Environmental Policy Act (NEPA) of 1969. It was completed in 1982.

31 **Interstate 81/Interstate 77 Overlap:** Construction of this segment near Wytheville marks the completion of Virginia's mainline interstate system in 1987.

32 **Interstate 195 in Richmond:** Paralleling the Richmond, Fredericksburg and Potomac Railroad through the city, designers center-lined this interstate spur to avoid much disruption of traffic. At the time, it was one of only two routes in the country with a railway using the median strip.

33 **Interstate 295:** This bypass of Richmond and Petersburg was the last segment of Virginia's interstate to be completed. It was finished in 1992.



INTERSTATE SYSTEM

"I believe one of the most amazing accomplishments has been the building of the interstate system. I remember the early 1960s when my grandfather said of the I-81 construction, 'With all this nice farm land being used for that road, someone is going to go hungry.' It is ironic that it had the opposite effect. This system has allowed us to feed huge populations in a timely manner. We enjoy produce shipped from around the world. Interstate roads have made this possible by reducing transport time and preventing spoilage of these delicate commodities. The interstate is part of the living organism we call a great nation. As a VDOT employee, I am very proud of being a part of this."

Marshall Funk, maintenance operations manager
Wytheville Residency, 36 years of service

BRIDGES, TUNNELS AND FERRIES

The department has created an infrastructure that includes award-winning bridges and tunnels considered engineering marvels.

34 **Woodrow Wilson Bridge:** The original bridge, built in 1961, was designed to carry 75,000 daily vehicles across the Potomac River on I-95 and I-495. It now carries 200,000 vehicles per day and is being replaced by two bridges. The $2.44 billion effort, to be completed in 2011, is the largest construction project in the nation in terms of active contracts. Photo: Ronaldo T. "Nick" Nicholson, P.E., project manager.

35 **Varina-Enon Bridge:** Virginia's first cable-stayed bridge carries I-295 traffic. Finished in 1990, the beautiful, sleek bridge crosses the James River southeast of Richmond.

36 **The Monitor Merrimac Memorial Bridge-Tunnel:** The first simultaneous construction in Virginia of twin underwater tunnel tubes, this project connects Newport News and Suffolk. Completed in 1992, it carries I-664 traffic.

37 **George P. Coleman Bridge:** First constructed as a two-lane, double-swing-span bridge in 1952, the bridge supports Route 17 between Yorktown and Gloucester Point. The bridge was reconstructed as a four-lane structure from 1994-1996.

38 **Smart Bridge:** This unique structure in Montgomery County carries the "Smart Road" across Wilson Creek. At 175 feet, Virginia's tallest bridge accommodates various testing devices.

39 **Route 17 James River Bridge:** Built in 1928 by private investors and purchased by the department in 1949, this 4.5-mile bridge across the James River was one of the longest on the East Coast. The original bridge's narrow deck was replaced with a four-lane bridge in 1982.

40 **Goshen Bridge:** This metal truss bridge built in 1891 was a treasure, but in dire need of renewing after a century of service. VDOT bridge engineers sent its aged parts to a company specializing in galvanizing structural steel, then reassembled the bridge in Rockbridge County in 2002.

41 **Meems Bottom Bridge:** This 200-foot single span is Virginia's longest covered bridge and one of only eight covered bridges left in the state.

42 **Kelly's Ford Bridge:** The old, narrow bridge across the Rappahannock River at Kelly's Ford needed replacing. Designers made the new bridge appear as if it had been constructed of old stones, and it was tinted to look aged.

43 **Downtown Tunnels and Berkley Bridges:** Built because of the Naval build-up in Norfolk during the Cold War era, the department built the original facility in 1952 as a two-lane tunnel. There were renovations and additions in the late 1980s. Today, these tunnels and bridges connecting Norfolk and Portsmouth provide eight lanes at that crossing.

44 **Robert O. Norris Bridge:** Connecting the Middle Peninsula and the Northern Neck, the Route 3 bridge was built in 1957 as a metal truss structure 100 feet above the Rappahannock River. It was reconstructed in the 1990s.

45 **Robert E. Lee Bridge:** This structure across the James River in Richmond was completed in 1988, replacing the original Lee Bridge. A pedestrian bridge is suspended beneath.

46 **Ferry services:** The Jamestown-Scotland Ferry connects Surry and James City counties. It is the department's only 24/7 ferry service. VDOT operates three other ferries.

PROJECT INSPECTOR

"I would like to nominate my father, Jerry K. Morrison, for consideration into VDOT's top 100. Jerry worked for the department from 1957 to December 1997, and he is known for his role as the project inspector for the Monitor Merrimac Memorial Bridge-Tunnel, which at the time was the largest contract awarded in the commonwealth. Jerry passed away on Dec.17, 2004, and this would be a fitting tribute to his legacy as well as his service to the department."

Terry Morrison, construction inspector,
Norfolk Residency, 25 years of service

OTHER PROJECTS

The department has completed too many projects to count over the century. These are memorable ones:

47 **I-395/95 interchange around the Pentagon:** When completed in 1973, this was the largest interchange in the nation. The "Mixing Bowl" sorted traffic from seven highways with 38 bridges and 32 grades.

48 **Pinners Point:** At $136 million, Pinners Point was the largest road construction contract in VDOT's history when work began in 2002. Completed in 2005, the project removed 80 percent of the heavy traffic from the historic Port Norfolk neighborhood, provided a more direct route for industrial traffic, and ensured easier access to the Midtown Tunnel.

49 **Wallen's Ridge (Route 58):** When opened in 1992, the $27 million project was one of the most complex in Lee County's history. Almost 4 million cubic yards of earth and rock were cut away from the top of Wallen's Ridge. The 4.3-mile roadway greatly enhanced safety and reduced travel times.

50 **I-95 James River Bridge Replacement:** In a public relations coup, the 1958 bridge deck was replaced between 2000 and 2002 in a unique process that significantly reduced traffic tie-ups.

51 **Route 288:** Completed in 2004, this created a long-awaited western loop for motorists traveling through Chesterfield, Powhatan and Goochland counties. It stretches from I-95 south of the capital to I-64 west of the city. The final section, including a bridge over the James River between Powhatan and Goochland counties, was built under the Public-Private Transportation Act. It was dedicated as the World War II Veterans Memorial Highway.

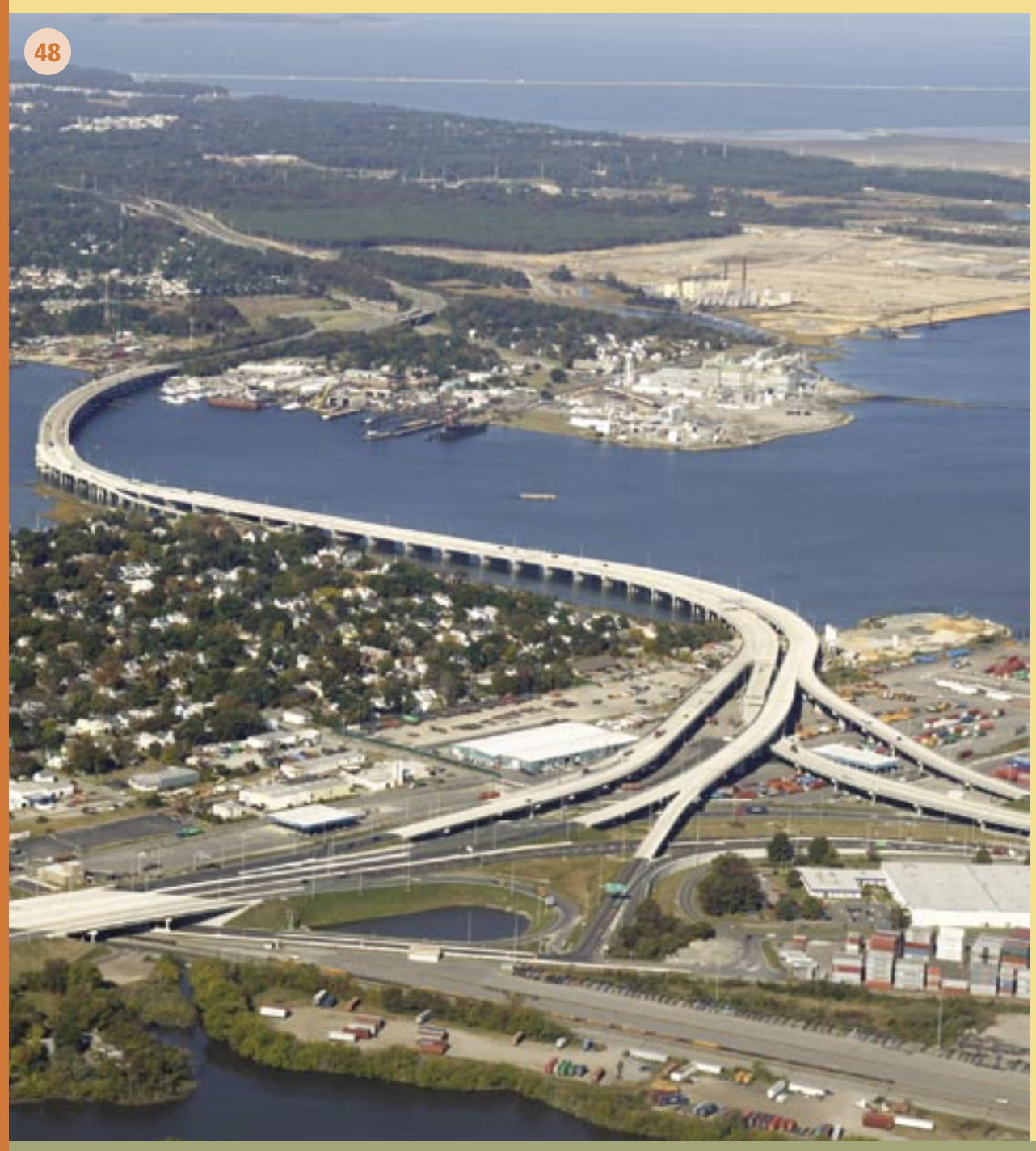
52 **Springfield Interchange:** This massive I-95/395/495 interchange south of Washington, D.C., carries 430,000 vehicles a day and is being rebuilt to carry this heavy traffic more safely. The project includes 50 bridges, began in 1999 and is on schedule for completion in late 2007. It includes the nation's first project "store" in a nearby mall.

53 **I-77 at Fancy Gap:** The entire stretch of I-77 through the mountains of Southwest Virginia was an engineering feat, with the Fancy Gap segment being the most difficult. One fill for Fancy Gap received 8 million cubic yards of material – for several years the largest fill on the East Coast. The project on Fancy Gap Mountain opened in 1977.

54 **Route 58 Danville Bypass:** The new 7.1-mile southern bypass opened in May 2004. The bypass increases the safety of travelers using the U.S. Route 58 corridor, allows for improved traffic flow through the city, and is expected to help expand the regional economy while maintaining the area's unique rural character.

55 **Route 58 Corridor Improvement Program:** In 1989, the General Assembly authorized bonds for upgrading the winding and often hazardous 500 miles of Route 58 along the state's southern border from Tennessee to Hampton Roads. So far $1.04 billion has been spent on that effort, with 179 miles converted from two-lane to four-lane highway. Still to be converted are 109 miles, including 12 miles now under construction.

56 **Madison Heights Bypass:** This bypass, completed in 2006, runs 13 miles through Amherst and Campbell counties, drawing traffic away from the crowded north-south Route 29 corridor and bringing major relief of traffic congestion on it, especially through Madison Heights.



ONLY LIFE FROM THIS BYPASS

"For many towns, a bypass is its death; but in St. Paul, the bypass solved many problems for not only residents, but many passing motorists. Once the Clinch River was re-routed and approximately three-fourth's of a mile was removed from its girth, St. Paul's flooding problems were resolved forever–unless the flood of Noah returns. The bypass also opened up new opportunities for economic growth and expansion. The small southwest town now had room for an industrial park and a walking track around Oxbow Lake. This took place many years ago, and the only real loss is some of the great fishing spots along the Clinch River."

Harmon Kilgore, maintenance operations manager
Wise Residency, 16 years of service

SAFETY

Safety has always been the watchword of the department. Many initiatives have been taken to reduce crashes and incidents. Here are a few:

57 **Work Zone Safety:** Through public service campaigns, employee presentations to students in driver education courses, annual Work Zone Safety Awareness Weeks and events for the public and the news media, VDOT continues to emphasize the hazards of driving through work zones to both motorists and highway workers.

58 **Highway Safety Corridors:** In 2002, 913 people died and 78,896 more were injured in crashes on Virginia's highways. To reduce those numbers, the General Assembly directed three state agencies to create a program addressing safety in high-crash locations. Initially, segments of interstates with higher crash rates were identified. On those segments, state police enforce speed limits more aggressively and higher fines can be imposed. In the first year after a corridor was established on I-95 in Richmond, the crash rate decreased 13 percent. On a corridor of I-81 in the Roanoke Valley, the number of crashes decreased 29 percent.

59 **Afton Mountain fog lights:** Dense fog frequently covers Afton Mountain where I-64 crosses it, and driving can suddenly turn dangerous for motorists. To help motorists navigate, airport runway touch-down lights were installed in the mid-1970s on the right and left edges of the interstate's pavement. This is the only non-airport installation of these incandescent lights in the nation.

60 **Safety Service Patrols:** Free roadway assistance for motorists began in 1972 in Northern Virginia. It has evolved into safety service patrols in four regions, mostly on interstates: In Northern Virginia and Hampton Roads districts, the operation for motorists in distress is offered 24/7. Fredericksburg and Roanoke patrols operate during certain peak travel times and days.

61 **Bridge inspection:** VDOT implemented inspection on federal-aid system bridges in 1970 and on all bridges a few years later. Bridge inspectors identify deficiencies on structures before they become dangerous to motorists. They also conduct structural assessments of bridges to determine their safe load-carrying capacity. This program has given the public confidence in the strength of Virginia's bridges for many years.

62 **Rumble Strips:** In 1993, VDOT traffic engineer Chung Chen began extensive research into the increasing number of run-off-the-road crashes. That research resulted in VDOT's decision to install rumble strips on all of Virginia's rural interstate highways – and the strips reduced run-off-the-road-crashes by 51.5 percent. That reduction garnered VDOT a national safety award. About 80 percent of Virginia's rural interstates now have continuous shoulder rumble strips. All 50 states and 19 countries have adopted VDOT's research findings on rumble strips.

63 **VDOT Workers' Memorial:** Built entirely with donated funds and dedicated on Sept. 17, 2004, the memorial honors state highway workers who died of work-related causes. As of April 2006, the names of 131 employees, who died between 1928 and 2005, were engraved on the unique memorial.

VDOT WORKERS' MEMORIAL

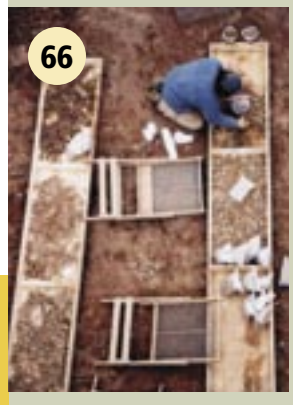
"What can anyone say about someone laying down their life to Keep Virginia Moving? All of our transportation operators, survey crews, bridge inspectors, painting crews and the like, put their life on the line each day when they are out on our roads, making it safer for our citizens to get where they need to be.

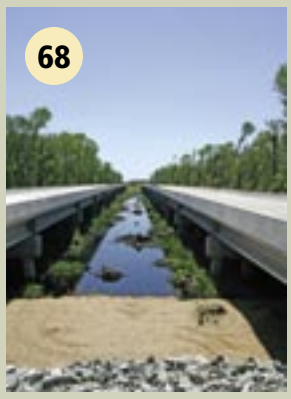
The memorial represents the deep emotion and respect we have for all the names listed on the memorial. The saying 'We are family' is how we truly feel for those who have died, and for the ones we work with everyday. God bless them all."

Danna Mullenax, financial specialist
Scheduling and Contract Division, Staunton District, 38 years of service

ENVIRONMENTAL

Protecting and enhancing the environment has been a top priority for years. Here are a few of those efforts:





64 **Outdoor advertising controls:** In 1967, Virginia became the third state in the nation to enter into an agreement with the Federal Highway Administration on standards for controlling outdoor advertising signs along interstate and federal-aid primary highways.

65 **Wetland mitigation bank:** The department in 1982 established the first wetland mitigation bank in the country to offset impacts of future roadway improvements. Photo: Tidal wetland mitigation site in West Point.

66 **Brook Run archaeological discovery:** In 1998, VDOT archaeologists, conducting a routine cultural resources study along Route 3 in Culpeper County, discovered one of the earliest indications of civilization in North America. The Paleo-Indian jasper quarry site dating to 11,500 years ago revealed that early Americans came to the Brook Run area to mine jasper nodules from a vertical seam at the site.

67 **Adopt-a-Highway:** Established in 1988, Virginia's Adopt-a-Highway program is one of the largest in the country. Every year, more than 6,000 Adopt-a-Highway groups collect about 300,000 bags of trash from 14,000 miles, or one-fourth, of Virginia's roads. Volunteers provide the equivalent of roughly $3 million annually in litter-control services to the state.

68 **Route 17 Relocation Project:** A 12-mile stretch of this route in Chesapeake was widened and improved, making it safer for motorists. To reduce disturbance to wildlife in the adjacent Great Dismal Swamp, VDOT donated 758 acres of land for a wildlife management area. The project also incorporated oversized culverts and bridge underpasses for animals to safely cross the road.

69 **Wildflowers:** In 1976, VDOT and the Virginia Federation of Garden Clubs developed a wildflower program under the auspices of "Operation Wildflower." During the first year of the program, VDOT planted 25 plots of wildflowers across the commonwealth. Today wildflowers color Virginia with more than 500 acres of assorted species planted along our state highways.

70 **Transportation Enhancements Program:** This federal initiative provides grants for projects that enhance the travel experience and foster quality of life. Funding is provided for sidewalks, bike lanes, conversion of abandoned railroad corridors into trails, and other such uses. As of 2005, VDOT had channeled approximately $199 million in enhancement funds to localities.

71 **Peregrine falcons:** Through placement of nesting boxes on bridges maintained by VDOT, the endangered peregrine falcons–considered the world's fastest birds–once again fly high over Virginia's eastern seaboard. Because of the significant role it played in the recovery of the peregrine falcon in Virginia, VDOT earned the 1998 Federal Highway Administration Excellence Award in the category of Environment Protection and Enhancements.

72 **Woodrow Wilson Bridge:** Because of the sheer magnitude of the $2.44 billion project over the eco-rich Potomac River, environmental efforts to compensate for impacts are extensive. Preservation and conservation efforts include establishment of an 84-acre bald eagle sanctuary; more than 100 acres of wetlands created or preserved; and 22 acres of river grasses planted in the lower Potomac River.

RESCUING THE DANVILLE TRAIN STATION

"My favorite enhancement project is the Danville Train Station renovation. The station was in a terrible state of disrepair, and the railroad was going to close it and move the ticket office to a kiosk down the street. The CTB allocated $940,000 for the renovation. The city turned over 90 percent of the space to the Science Museum as a satellite facility. Schools helped design 'hands-on' experiments for visitors. A sliver of one of the timbers was carried on a space shuttle flight, and returned at the ribbon cutting. Tickets are still sold at the station, and the interpretative program is booked solid during the school year. The museum generated over $1 million in pledges the first year of operation."

Robert Cassada, state scheduling engineer
Scheduling and Contract Division, Central Office, 38 years of service

MANAGEMENT INITIATIVES

Management initiatives have dramatically changed the way the department does business.

73 **Dashboard:** The prototype for this Web-based project tracking system was revealed in 2002. Developed completely in-house, this early warning system allows project managers to see in an instant which jobs are at risk of falling behind schedule or going over budget. In 2005, the Dashboard expanded six-fold showing the latest performance of other core business areas. Available for public viewing online, the award-winning Dashboard has been hailed nationwide as a model of government transparency and openness.

74 **Project Cost Estimating System:** Developed in-house, the Project Cost Estimating System allows for better decisions in the earlier phases of a project. Before the system was developed, VDOT underestimated project costs by an average of 187 percent. After one year of using the new cost-estimating system, VDOT reduced the margin to 30 percent.

75 **Right of Way and Utilities Management System (RUMS):** This $2.5 million software program developed in-house in concert with a contractor, helps the Right of Way and Utilities Division effectively manage the complicated and sometimes lengthy right-of-way process from start to finish. The system went live in 1999, and the software program has been so successful that it has been sold to other states' agencies.

76 **Improved project management:** In 2003, VDOT began assigning full-time project managers and accelerating efforts to decentralize decision-making authority. Initiatives included: reorganizing the agency so VDOT's district administrators report directly to the commissioner; holding regular CEO round-table discussions; conducting early constructability reviews to ensure plans are correct; and using vacancies to hire 50 professional engineers for positions in the field. Photo: Mark Cole, P.E., Sandston Residency.

77 **Six-Year Program:** VDOT's first Six-Year Program began in Fiscal Year 1983. Today, it is known as the Six-Year Improvement Program (SYIP), and is a broad-based financial programming document. The Commonwealth Transportation Board adopts a SYIP annually to distribute anticipated funds for public transit, rail and interstate and primary highway construction projects over the next six fiscal years.

78 **Comprehensive Data and Reporting System (CEDAR):** This tracking tool came online in 2004 and provides one location for documentation of environmental decisions, streamlining interagency actions and communicating environmental commitments made by the department.

79 **Financial Management System (FMS):** Implemented in 1998 to record and report VDOT's financial transactions, this was one of the department's first client-server, technology-based systems.

80 **FOIA Tracker:** In order to more efficiently comply with Virginia's Freedom of Information Act (FOIA), VDOT in 2005 developed in-house a statewide Web-based management system to track citizen requests for data and records throughout the agency. The FOIA Tracker replaced antiquated spreadsheets and gives up-to-the-minute information on VDOT's responses to FOIA requests. The department is copyrighting this information management tool.

RESPONSIBLE ENGINEER CHARGE

"Having come from outside of VDOT due to the opportunities set before me, I truly believe that the past 1½ years have been an exciting time that will take VDOT into its next 100 years stronger than ever before. The addition of licensed professional engineers into the construction inspection ranks is already bringing about drastic changes in the way we prepare and administer contracts. As the projects and contracts have increased in complexity, the need for the services of area construction engineers has become paramount. It was a major step in the right direction to give the area construction engineers charge over the construction projects."

Kenneth Shirley, district construction engineer
Culpeper District, 1½ years of service

INNOVATION AND TECHNOLOGY

Computerization has revolutionized the agency over several decades, as any veteran will tell you. VDOT has used technology for innovation in many areas, including building and operating highways. Here are just a few examples:

81 **Virginia Transportation Research Council (VTRC):** In 1948, the department initiated a partnership with the University of Virginia that created the VTRC. Now ranked in the top tier of state transportation research centers, the VTRC is nationally known for its staff expertise and the multi-faceted research it conducts in materials, pavements, structures, system operations, traffic engineering, safety, environmental protection and business practices.

82 **Longer-Lasting concrete structures:** The VTRC is a national leader in research to extend the life of concrete structures, developing strategies for more durable concrete and corrosion prevention since the 1970s.

83 **Improved pavements:** The VTRC has led the nation with its research into asphalt mixtures with a longer life. In 1993, a binder lab was constructed and equipped with the latest asphalt testing equipment.

84 **Global Positioning System (GPS):** This technology lets VDOT capture precise location information for data collection and surveying. GPS can be used to pinpoint the location of VDOT assets such as bridge abutments and signs. Other uses include defining the location of vehicle crashes, tracking snow plows, and delineating wetlands.

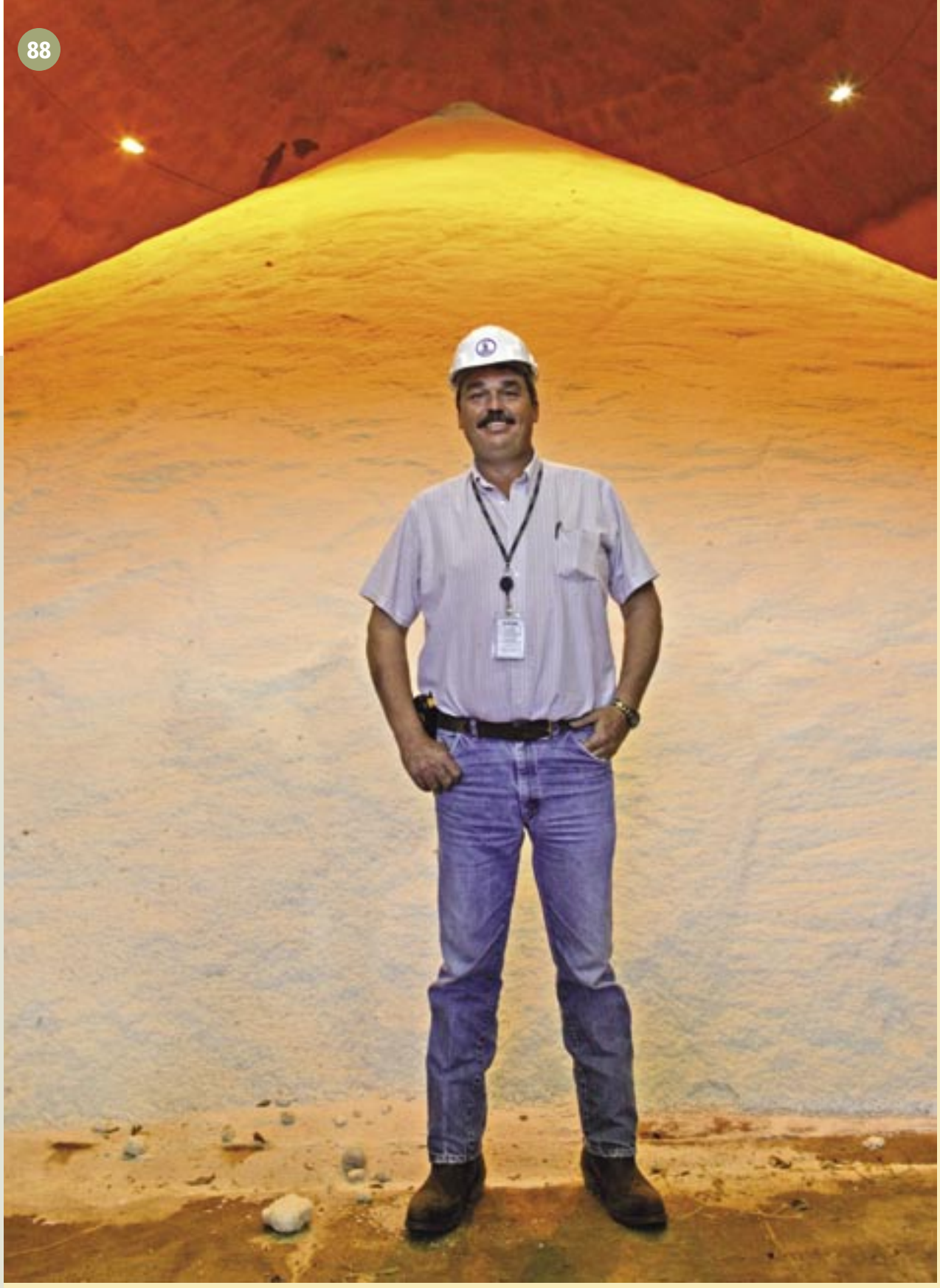
85 **Smart Traffic Centers:** VDOT has Smart Traffic Centers in Northern Virginia, Hampton Roads, the Richmond area, Salem and Staunton. The centers' technologies include camera images and imbedded road sensors that alert controllers to changes in traffic flow. Controllers can spot and report incidents to emergency responders, change traffic signal patterns to relieve congestion, dispatch Safety Service Patrollers to stranded vehicles, and program message signs to let motorists know what to expect.

86 **Smart Tag:** This electronic toll collection system lets motorists pay tolls without stopping. In Virginia, there are more than one-half million active Smart Tags and 11 million electronic toll transactions per month. In 2004, Smart Tag joined the E-ZPass program.

87 **Geographic Information Systems (GIS):** GIS integrates data with a digital map. With GPS coordinates (latitude and longitude) or route and mile marker, details about a specific location can be queried and analyzed. GIS tools show cultural and natural resources that might be affected by a planned road project; help determine where transportation needs will be in 25 years; and show where frequent incidents are causing traffic congestion.

88 **Salt storage dome:** The largest salt storage facility in the U.S. was completed in 2002 in the Northern Virginia District. A spherical concrete dome 65-feet high and 140 feet in diameter, the facility has a 20,000-ton capacity.

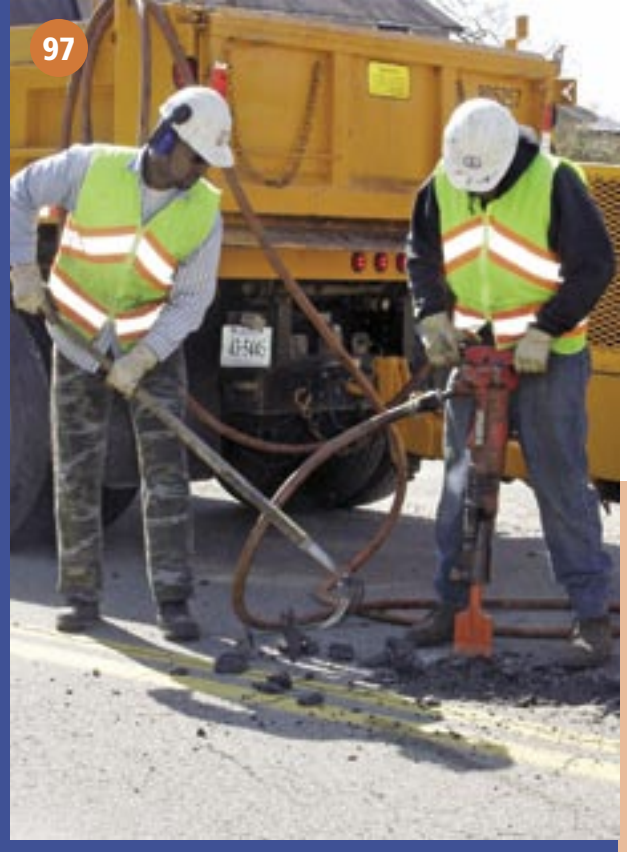
89 **Virginia Operational Information System (VOIS):** The Web-based VOIS, introduced by VDOT in 2000, lets federal, state and local emergency response and management agencies quickly share real-time information about work zones, incidents and emergencies.



INFORMATION TECHNOLOGY

"When I began working in Data Processing (now Information Technology) the computer system consisted of two keypunch machines, a card reader, a line printer and one data communication line to the Division of Information Technology (now VITA). At the start of the day, we dialed a number connected to the netwwork line and pressed the "hold" button to keep the line active to process our computer jobs through the card reader. There were only two computer technicians processing jobs for Contract Administration, Bridge, Materials and Location and Design. It really is amazing how far that technology has brought us to enhance our business processes!"

Marcheta Laine, information technology supervisor
VITA/VDOT, Richmond District, 29 years of service



EMERGENCY RESPONSES

VDOT's maintenance forces built a solid reputation for their response to natural disasters affecting roads and bridges throughout the century. Here are a few examples of employees' determined, and often courageous, responses:

90 **Blizzard of 1966:** Two major snowstorms hit Virginia in the last week of January 1966. The first one, on Jan. 26, dropped as much as 12 inches across the state. On Jan. 29, a second snow piled another foot on many parts. Some employees worked 50 hours without rest, stopping only because of exhaustion or frostbite.

91 **Hurricane Camille:** This most destructive storm to hit Virginia in the last century brought its fury in August 1969, killing 130 people and damaging or destroying 700 miles of roads. More than 30 inches of rain fell on Nelson County in one night. Access to the county was restricted for six weeks. It was two years before the system was completely restored.

92 **Hurricane Agnes, June 21-22, 1972:** Approximately 100 highways were damaged or destroyed in this hurricane, which killed 13 Virginians. A 200-block area of Richmond was flooded, and only one of five bridges across the James was left useable. Damages amounted to $222 million in the state.

93 **Hurricane Juan:** Flooding from this huge storm ravaged the state at the end of October 1985. Termed the eighth-costliest hurricane to hit the United States, it caused 40 counties and 12 cities in Virginia to be declared disaster areas. Twenty-two people died amidst $753 million in damage. Within five days, however, traffic had been restored by VDOT employees to all but 79 of the 850 roads and bridges closed by high waters.

94 **"Storms of the Century":** In March 1993, Virginia was nearly shut down with 30-inch snows, 70 mph winds and single-digit temperatures. VDOT crews struggled through huge drifts to reach their work units or to get their snow plows moving; others were doing their best to rescue people dangerously stranded by the blizzard, termed "The Storm of the Century" by newscasters. Then, in January 1996, a second killer storm paralyzed the state. It too was named "Storm of the Century."

95 **500-year flood of 1995:** In June, fierce flooding swept away roads and bridges in Culpeper District along the Blue Ridge Mountains where the Rapidan River became a swollen torrent larger than the James River at flood stage. Five-hundred secondary roads and 11 primary roads were badly damaged or destroyed.

96 **Hurricane Floyd:** Flooding from this September 1999 hurricane devastated southeastern Virginia. In Franklin alone, 182 businesses and 150 homes were under water. VDOT teams came from all over the state with equipment and whatever it took to help with recovery.

97 **Pothole Blitz:** After repeated snows and flooding in the winter of 2003, Gov. Mark Warner ordered what became called a "pothole blitz" to repair Virginia's roads. VDOT employees and contractors attacked potholes with solid resolve, repairing about 95,000 potholes during the two-week campaign.

HURRICANE CAMILLE

"Virginia roads have been damaged by many hurricanes over the 100-year period, but none did as much damage in as small a geographic area or took as many lives as this storm (Hurricane Camille). More than half the road system in Nelson County was damaged. One hundred and thirty people lost their lives. Access to the county was restricted for six weeks while VDOT employees from three districts and road contractors worked tirelessly to make the roads passable and safe. It took a couple of more years for all the damage to be permanently repaired. It is a well remembered point of pride and sorrow in the career of many a VDOT employee."

Daniel S. Roosevelt, research scientist,
Virginia Transportation Research Council, 42 years of service

TOURISM AND RECREATION

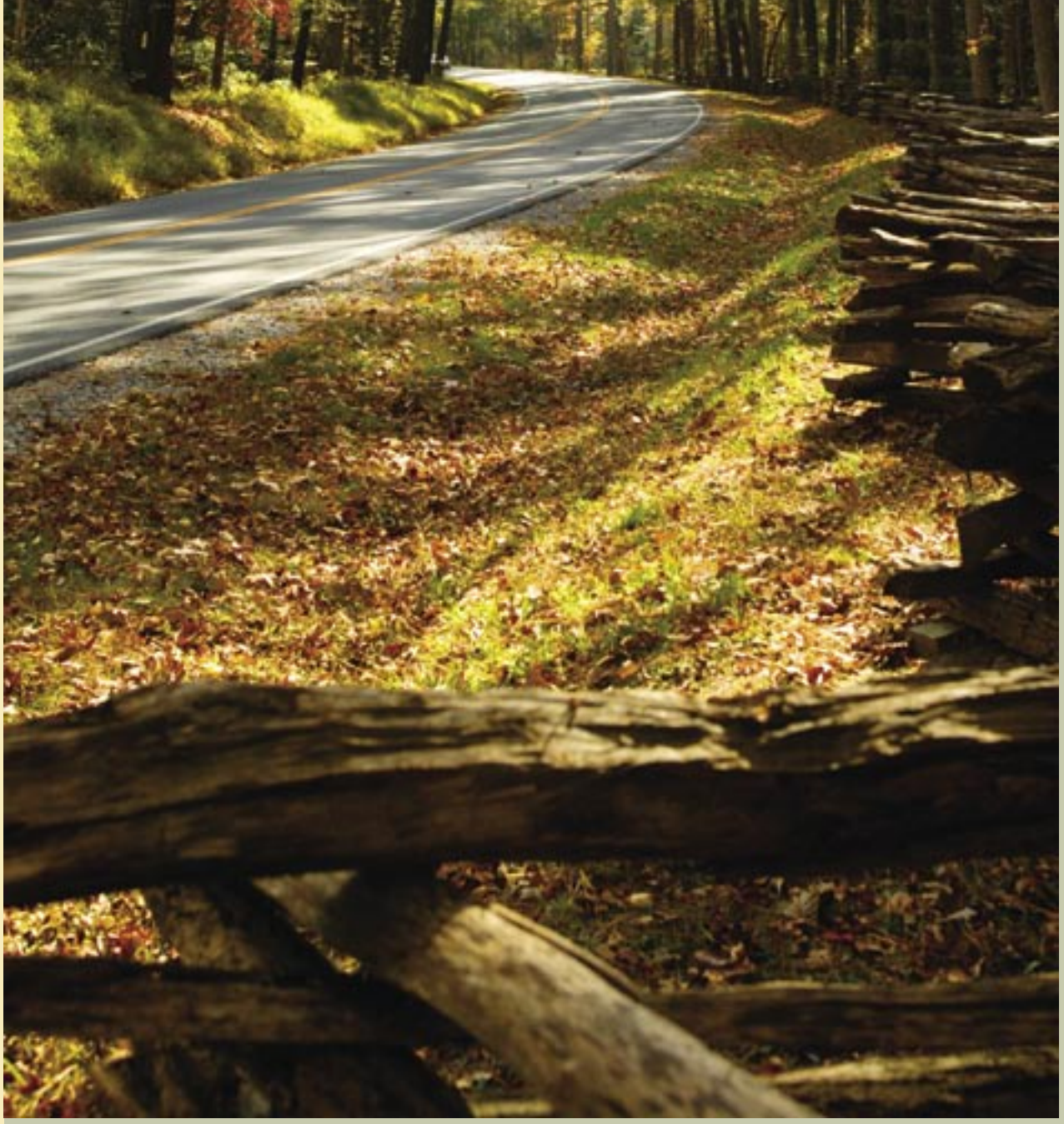
Helping people enjoy Virginia's many scenic and recreational venues is a focus for the department. Initiatives toward this include:

98 **Virginia's scenic roads:** Virginia Byways lead travelers to archaeological, cultural, historic, natural, recreational or scenic areas. Virginia's first byway, Route 193 in Fairfax County, was designated in 1974. Today, there are more than 2,700 miles of these roads. The program also stimulates local economies by attracting visitors to roads less traveled. The beautifully illustrated department-produced "A Map of Scenic Roads in Virginia" showcases the byways.

99 **Virginia's Official State Transportation Map:** The state map is required by law, and a new one is printed every two years. The first map was published in 1922 and was scribed manually. The first color map was printed in 1947, and the first computer-generated map was published in 1994. Millions of maps are printed yearly to meet the public's demand. The 2006-2008 map commemorates the 400th Anniversary of America: the founding of Jamestown.

100 **Bicycling and Walking:** In March 2004, the Commonwealth Transportation Board adopted a Policy for Integrating Bicycle and Pedestrian Accommodations. This policy considers bicycling and walking "fundamental travel modes" and commits VDOT to initiating all highway construction projects with the presumption that cycling and walking will be considered. This approach is called "routine accommodation," and it is one way of addressing the need to create an inter-modal, multimodal transportation system.

98



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DISTRICT CELEBRATIONS

Most districts around the state celebrated VDOT's 100th anniversary on March 6, 2006. They held open houses and invited employees, retirees and their families to come and reminisce. Attendees enjoy centennial logo cakes, balloons, lapel pins and special activities. Many districts showed VDOT's four-minute "100 Years of Transportation Excellence" video, displayed vintage photographs and equipment, offered tours of facilities and more.

In addition to the festivities mentioned above, on the left is what individual districts are doing or have done to mark this special year.

BRISTOL

A special Centennial Edition newsletter was e-mailed to all employees; Centennial Cinema sessions to show transportation documentaries are being held through the end of the year; and an open house is planned for the early fall at the district office complex.

CULPEPER

Employees with 40 years or more of service were recognized at the district's March 6 event.

FREDERICKSBURG

"On this Day in History" pocket guides were distributed to all attendees at Fredericksburg's March 6 celebration. The district also buried a time capsule that included VDOT memorabilia.

HAMPTON ROADS

Area headquarters across the district celebrated by inviting retirees, taking trips down memory lane and reviewing old photos. Centennial Cinema sessions have recently been held at various locations.

LYNCHBURG

Collages of old photographs, *Bulletins* and memos were displayed March 6; a letter of thanks from the district administrator was read; and monthly Centennial Cinema sessions are being held.

NORTHERN VIRGINIA

Employees shared "Remember When" stories, VDOTers provided music, and employees' children entered an art contest on "What VDOT means to you and your family."

RICHMOND

District employees are celebrating VDOT's centennial during their District Safety Day in September.

SALEM

Salem's employee newsletter featured a "Moments in Time" photo match contest. Winners received commemorative keychain watches. The newsletter featured the employee with the most years of service–Jack Orr, district right of way manager, with 48 years of service.

STAUNTON

Employees and retirees signed a big birthday card, and photos were taken and given to guests as they arrived. Old equipment was on display in the shop, and tours were given of the Smart Traffic Center.

DEDICATION AND ETHICS

"Some of the hallmarks I can reflect on are the dedication and ethics of the VDOT family. You can always count on our employees to meet a challenge when there is a weather emergency or when financial times dictate either accelerating a program to respond to the availability of additional resources, or reducing a program to respond to a reduction in resources. We can all be proud of these rich traditions."

James S. Givens, district administrator
Bristol District, 41 years of service

I remember the mud!

“I remember the roads of rural Grayson County as they were in 1970 when I joined the department. They were little more than one-lane dirt paths snaking their way across the fields and woods. At that time, stone and material to stabilize the surface was a luxury, saved for more heavily traveled roads. It was our assignment to meet and pull school buses through the mud each morning and evening when the ground was not frozen. Resources were not available to stabilize the many miles of dirt roads. This was accepted as normal, and not viewed as any unusual inconvenience.

With all the changes, I remember the one thing that has stayed constant. From the time Virginia took on the responsibility of the roads in 1932 to the present day, it was the people who transformed the wild game and cattle paths into passable roads for the Model T. That same hard work, dedication, and intestinal fortitude has enabled us to produce the most complex and efficient transportation system in history. I also remember some of those men’s stories who came to work shortly after 1932.

We owe all those who have contributed to what we now see our respect and gratitude. Without each of them, it would not have been possible.”

Marshall Funk, maintenance operations manager
Wytheville Residency, 36 years of service

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100 YEARS OF TRANSPORTATION EXCELLENCE 1906 - 2006